

WHAT IS CLAIMED IS:

1. A wavelength-division-multiplexed metro optical network comprising:

5 a transmitting unit having transmitters for directly modulating a light into digital optical signals with different wavelengths and outputting the modulated optical signals and a multiplexer for multiplexing the optical signals outputted from the transmitters and transmitting the multiplexed signal;

10 a receiving unit having a demultiplexer for receiving the multiplexed signal outputted from the multiplexer, demultiplexing the received signal on the basis of the respective wavelengths, and outputting the demultiplexed signals, and receivers for receiving the demultiplexed signals
15 outputted from the demultiplexer; and

an optical fiber connected between the multiplexer and the demultiplexer, wherein the optical fiber has a negative dispersion value of from -1 ps/nm/km to -3.3 ps/nm/km at a wavelength of 1550 nm, and a positive dispersion inclination.

20 2. The network as set forth in claim 1, further comprising at least one optical amplifier disposed between the multiplexer and the demultiplexer.

25 3. The network as set forth in claim 2, wherein the

distance between an optical amplifier and the neighboring optical amplifier is from 10 km to 80 km.

5 4. The network as set forth in claim 1, wherein the optical fiber has a zero-dispersion wavelength of from 1560 nm to 1595 nm.

5. The network as set forth in claim 1, wherein the transmitters have a transmission speed per channel of 10 Gb/s.

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